

WHAT IS CLAIMED IS:

1. A flexible laminate structure comprising:

5 a first substrate containing a thermoplastic polymer and a second substrate containing a thermoplastic polymer, wherein the thermoplastic polymer of said first substrate is fused together with the thermoplastic polymer of said second substrate to form fused portions and unfused portions located between said fused portions, said unfused portions defining pockets containing discrete regions of a functional material selected from the group consisting of particles, liquids, and combinations thereof, said pockets having an approximate width to height ratio of less than about 10.

10 2. A flexible laminate structure as defined in claim 1, wherein said pockets have an approximate width to height ratio of between about 1 to about 8.

15 3. A flexible laminate structure as defined in claim 1, wherein said pockets have an approximate width to height ratio of between about 1 to about 5.

20 4. A flexible laminate structure as defined in claim 1, wherein said pockets have an approximate length to width ratio of less than about 20.

5 5. A flexible laminate structure as defined in claim 1, wherein at least one of said substrates contains a nonwoven web.

6. A flexible laminate structure as defined in claim 1, wherein at least one of said substrates contains a film.

25 7. A flexible laminate structure as defined in claim 1, wherein said first substrate and said second substrate are selected from the group consisting of nonwoven webs having a thickness of less than about 0.1 inches, films having a thickness less than about 0.05 inches, and combinations thereof.

30 8. A flexible laminate structure as defined in claim 1, wherein said first substrate and said second substrates are selected from the group

consisting of nonwoven webs having a thickness between about 0.015 inches to about 0.03 inches, films having a thickness between about 0.0007 inches to about 0.002 inches, and combinations thereof.

9. A flexible laminate structure as defined in claim 1, wherein at least one of said substrates contains a film that is substantially impermeable to liquids but substantially permeable to gases.

10. A flexible laminate structure as defined in claim 1, wherein said unfused portions are substantially permeable to liquids and said fused portions are substantially impermeable to liquids.

11. A flexible laminate structure as defined in claim 1, wherein at least one of said substrates contains an elastomeric component.

12. A flexible laminate structure as defined in claim 1, wherein said functional material has a certain color, said substrates substantially masking said color when said substrates are fused together.

13. A flexible laminate structure as defined in claim 1, wherein said functional material contains particles selected from the group consisting of superabsorbents, deodorants, colorants, fragrances, catalysts, germicidal materials, filtration media, proteins, drugs, and combinations thereof.

14. A flexible laminate structure as defined in claim 1, wherein the area of said fused portions is between about 40% to about 60% of the area of said unfused portions.

15. A flexible laminate structure comprising:

a first substrate and a second substrate, said first substrate and said second substrates being selected from the group consisting of nonwoven webs having a thickness less than about 0.1 inches, films having a thickness less than about 0.05 inches, and combinations thereof, said first substrate containing a thermoplastic polymer and said second substrate containing a thermoplastic polymer, wherein the thermoplastic polymer of said first substrate is fused together with the

thermoplastic polymer of said second substrate to form fused portions and unfused portions located between said fused portions, said unfused portions defining pockets containing discrete regions of a functional material selected from the group consisting of particles, liquids, and combinations thereof, said pockets having an approximate width to height ratio of between about 1 to about 8.

16. A flexible laminate structure as defined in claim 15, wherein said pockets have an approximate width to height ratio of between about 1 to about 5.

17. A flexible laminate structure as defined in claim 15, wherein said pockets have an approximate length to width ratio of less than about 20.

18. A flexible laminate structure as defined in claim 15, wherein said first substrate and said second substrates are selected from the group consisting of nonwoven webs having a thickness between about 0.015 inches to about 0.03 inches, films having a thickness between about 0.0007 inches to about 0.002 inches, and combinations thereof.

19. A flexible laminate structure as defined in claim 15, wherein at least one of said substrates contains a film that is substantially impermeable to liquids but substantially permeable to gases.

20. A flexible laminate structure as defined in claim 15, wherein said unfused portions are substantially permeable to liquids and said fused portions are substantially impermeable to liquids.

21. A flexible laminate structure as defined in claim 15, wherein at least one of said substrates contains an elastomeric component.

22. A flexible laminate structure as defined in claim 15, wherein said functional material has a certain color, said substrates substantially masking said color when said substrates are fused together.

23. A flexible laminate structure as defined in claim 15, wherein said functional material contains particles selected from the group

consisting of superabsorbents, deodorants, colorants, fragrances, catalysts, germicidal materials, filtration media, proteins, drugs, and combinations thereof.

24. A flexible laminate structure as defined in claim 15, wherein the area of said fused portions is between about 40% to about 60% of the area of said unfused portions.

25. A method for forming a flexible laminate structure comprising:
providing a first substrate containing a thermoplastic polymer;
depositing a functional material onto said first substrate in discrete regions, said functional material being selected from the group consisting of particles, liquids, and combinations thereof;

placing a second substrate containing a thermoplastic polymer adjacent said first substrate such that said functional material is sandwiched between said first and said second substrates;

fusing the thermoplastic polymer of said first substrate with the thermoplastic polymer of said second substrate to form fused portions and unfused portions located between said fused portions, said unfused portions defining pockets containing said discrete regions of said functional material, said pockets having an approximate width to height ratio of less than about 10.

26. A method as defined in claim 25, wherein said functional material is deposited onto said first substrate utilizing a deposition technique selected from the group consisting of vacuum screen, template, xerographic, electrostatic, print, and combinations thereof.

27. A method as defined in claim 25, wherein said pockets have an approximate width to height ratio of between about 1 to about 8.

28. A method as defined in claim 25, wherein said pockets have an approximate width to height ratio of between about 1 to about 5.

29. A method as defined in claim 25, wherein said pockets have an approximate length to width ratio of less than about 20.

30. A method as defined in claim 25, wherein at least one of said substrates contains a material selected from the group consisting of nonwoven webs, films, and combinations thereof.

31. A method as defined in claim 25, wherein said first substrate and said second substrate are selected from the group consisting of nonwoven webs having a thickness of less than about 0.1 inches, films having a thickness less than about 0.05 inches, and combinations thereof.

32. A method as defined in claim 25, wherein said first substrate and said second substrates are selected from the group consisting of nonwoven webs having a thickness between about 0.015 inches to about 0.03 inches, films having a thickness between about 0.0007 inches to about 0.002 inches, and combinations thereof.

33. A method as defined in claim 25, wherein at least one of said substrates contains a film that is substantially impermeable to liquids but substantially permeable to gases.

34. A method as defined in claim 25, wherein said unfused portions are substantially permeable to liquids and said fused portions are substantially impermeable to liquids.

35. A method as defined in claim 25, wherein at least one of said substrates contains an elastomeric component.

36. A method as defined in claim 25, wherein said functional material has a certain color, said substrates substantially masking said color when said substrates are fused together.

37. A method as defined in claim 25, wherein said functional material contains particles selected from the group consisting of superabsorbents, deodorants, colorants, fragrances, catalysts, germicidal materials, filtration media, proteins, drugs, and combinations thereof.

38. A method as defined in claim 25, wherein the area of said

fused portions is between about 40% to about 60% of the area of said unfused portions.

39. A method as defined in claim 25, wherein said fusing is accomplished by a technique selected from the group consisting of thermal bonding, ultrasonic bonding, adhesive bonding, and combinations thereof.

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